

Title (en)
Photocatalytic water splitting

Title (de)
Fotokatalytische Wasserspaltung

Title (fr)
Hydrolyse photocatalytique

Publication
EP 2407419 A1 20120118 (EN)

Application
EP 10169861 A 20100716

Priority
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Abstract (en)
The invention is directed to a method for photocatalytic water splitting, and to an apparatus for carrying out said method. The method of the invention comprises - oxidising water with an oxygen evolution photocatalyst by irradiation with light, causing an electron to be generated in the conduction band of the oxygen evolution photocatalyst and a hole to be generated in the valence band of the oxygen evolution photocatalyst; - reducing water with a hydrogen evolution photocatalyst by irradiation with light, causing an electron to be generated in the conduction band of the hydrogen evolution photocatalyst and a hole to be generated in the valence band of the hydrogen evolution photocatalyst; wherein said oxygen evolution photocatalyst is in contact with a first side of an electrically conductive separator layer and said hydrogen evolution photocatalyst is in contact with a second side of said electrically conductive separator layer, and wherein the electron from the conduction band of the photo-excited oxygen evolution photocatalyst recombines with the hole from the valence band of the photo-excited hydrogen evolution photocatalyst via charge transfer through the electrically conductive separator layer.

IPC 8 full level
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Citation (applicant)
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